**Lab3**

**Metropolitan Area network (MAN)**

**LAN ONE.**

* **Three PCs**
* **One Switch**
* **Basic IP Configuration**
* **Testing connectivity using ping**

**Lab Steps: Setting Up a Simple LAN**

**Step 1: Open Cisco Packet Tracer**

Launch Cisco Packet Tracer and create a new project.

**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

1 x Switch

3 x PC (PC-0 to PC-3)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/3**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**IP Address:** 192.1.1.1

**Subnet Mask:** 255.255.255.0

**Click on PC-1**

**IP Address:** 192.11.1.2

**Subnet Mask:** 255.255.255.0

**Click on PC-2**

**IP Address:** 192.11.1.3

**Subnet Mask:** 255.255.255.0

**LAN Two.**

* **Three PCs**
* **One Switch**
* **Basic IP Configuration**
* **Testing connectivity using ping**

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PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/3**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**IP Address:** 192.0.0.1

**Subnet Mask:** 255.255.255.0

**Click on PC-1**

**IP Address:** 192.0.0.2

**Subnet Mask:** 255.255.255.0

**Click on PC-2**

**IP Address:** 192.0.0.3

**Subnet Mask:** 255.255.255.0

**LAN Three.**

* **Three PCs**
* **One Switch**
* **Basic IP Configuration**
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**Lab Steps: Setting Up a Simple LAN**

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PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/3**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**IP Address:** 172.16.0.1

**Subnet Mask:** 255.255.0.0

**Click on PC-1**

**IP Address:** 172.16.0.2

**Subnet Mask:** 255.255.0.0

**Click on PC-2**

**IP Address:** 172.16.0.3

**Subnet Mask:** 255.255.0.0

**LAN Four.**

* **Three PCs**
* **One Switch**
* **Basic IP Configuration**
* **Testing connectivity using ping**

**Lab Steps: Setting Up a Simple LAN**

**Step 1: Open Cisco Packet Tracer**

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**Step 2: Add Network Devices**

Drag and drop the following devices onto the workspace:

1 x Switch

3 x PC (PC-0 to PC-3)

**Step 3: Connect the Devices**

Use Copper Straight-Through Cables to connect:

PC-0 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/1**)

PC-1 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/2**)

PC-2 to Switch (**FastEthernet0**) and Switches 2950-24 (**FastEthernet0/3**)

**Step 4: Assign IP Addresses to PCs**

**Click on PC-0** → Go to Desktop → Open IP Configuration:

**IP Address:** 128.0.0.1

**Subnet Mask:** 255.255.0.0

**Click on PC-1**

**IP Address:** 128.0.0.2

**Subnet Mask:** 255.255.0.0

**Click on PC-2**

**IP Address:** 128.0.0.1

**Subnet Mask:** 255.255.0.0.

**SO WE NOW WE CONMECTED FOUR LABS.**

**To connected the four labs we use Router connects different networks and directs data between them.**

We give router four ip address by providing them with the holes they are connected to in networks.

* **You can follow all networks on any computer.**

1. **Ip address comes LAN ONE.** (**FastEthernet0/0)** 192.1.1.4. Make sure is on this port.
2. **Ip address Comes LAN TWO.** (**FastEthernet0/1)** 192.0.0.4. Make sure is on this port.
3. **Ip address Comes LAN THREE.** (**FastEthernet0/1/0)** 172.16.0.4. Make sure is on this port.
4. **Ip address Comes LAN FOUR.** (**FastEthernet0/1/1)** 128.0.0.4. Make sure is on this port.

This ip address you give router was called Default Gateway.

**LAN ONE.**

* Now Go back to your network and open each PC and type the following.
* **Click on PC-0** → Go to Desktop → Open IP Configuration.
* **Default Gateway**: 192.1.1.4.

**LAN Two.**

* Now Go back to your network and open each PC and type the following.
* **Click on PC-0** → Go to Desktop → Open IP Configuration.
* **Default Gateway**: 192.0.0.4.

**LAN Three.**

* Now Go back to your network and open each PC and type the following.
* **Click on PC-0** → Go to Desktop → Open IP Configuration.
* **Default Gateway**: 172.16.0.4.

**LAN Four.**

* Now Go back to your network and open each PC and type the following.
* **Click on PC-0** → Go to Desktop → Open IP Configuration.
* **Default Gateway**: 128.0.0.4.

Test it using this Command.

* Open one pc in network land one.
* **Click on PC-0** → Go to Desktop → Command Prompt.
* Write Ping 192.0.0.2.

ROUTER CONFIGURATION.

Now, all computers within the same network can communicate with each other, but they cannot reach another network. Now we will configure them to access the other network. Follow these steps:

* Click on router – config – Static.
* Fill these blanks.
  + Network:-
  + Mask:-
  + Next Hop:-
* Then click add bottom.

**Router 2**

**Router 3**

1. Network:- 192.1.1.0

Mask: - 255.255.255.0

Next hop: - 192.168.0.1

Add.

1. Network:- 192.0.0.0

Mask: - 255.255.255.0

Next hop: - 192.168.0.1

Add.

1. Network:- 192.168.0.0

Mask: - 255.255.255.0

Next hop: - 192.168.0.0

Add.

1. Network:- 172.16.0.0

Mask: - 255.255.0.0

Next hop: - 192.168.0.2

Add.

1. Network:- 128.0.0.0

Mask: - 255.255.0.0

Next hop: - 192.168.0.2

Add.

1. Network:- 192.168.0.0.0

Mask: - 255.255.255.0

Next hop: - 192.168.0.2

Add.

**Flow these Links**

<https://www.youtube.com/watch?v=qxHbrbLeBxw>

<https://www.youtube.com/watch?v=vcAtxgDsl00>